



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,594	12/13/2001	Jurgen Schredl	70408	7149

7590 04/02/2004

McGLEW AND TUTTLE
John James McGlew
Scarborough Station
Scarborough, NY 10510-0827

EXAMINER

TRAN, LEN

ART UNIT	PAPER NUMBER
----------	--------------

1725

DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/020,594

Applicant(s)

SCHREDL ET AL.

Examiner

Len Tran

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-9, 12-15, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leicht et al(US 5,551,627), and further in view of Gotman (US 4,404,453).

Leicht et al disclose the process for producing a contact structure for connecting two substrates comprising the steps of applying solder material to terminal to form spacing metallizations, and bonding the first substrate to the second substrate, wherein the solder is a spherical shape (figure 3, col. 4, lines 5-9). An adhesive compound is applied to the solder (col. 4, lines 40-51).

Leicht et al fail to disclose partially fusing the solder with a laser energy.

However, Gotman discloses using laser energy to partially melt the solder (col. 3, lines 19-22) for the purpose of avoiding or minimizing any damage to the parts being attached together (col. 2, lines 35-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a laser heating means to partially melt the solder as taught by Gotman, in Leicht et al in order to prevent any damage to the parts.

4. Claims 10, 11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leicht et al (US 5,551,627), and further in view of Beddingfield et al (US 5,710,071).

Leicht et al disclose the claimed invention above in paragraph 3, but fail to teach filling the gap between the substrates with a filler material.

However, Beddingfield et al disclose applying a filler (encapsulant) material in the gap of the substrates for the purpose of expelling any trap air and to prevent the chip from warping (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have filler material in between the substrates as taught by Beddingfield et al, in Leicht et al in order to expel air and prevent warping.

Response to Arguments

5. Applicant's arguments filed on September 26, 2003 have been fully considered but they are not persuasive.

Applicant argues that Gotmann fails to teach partial fusion of the spacing metallizations leaving an essential part of said spacing metallizations in its solidified state. Examiner respectfully disagrees, since col. 3, lines 19-22 discloses the claimed invention. The solder globules are partially liquefied before the contact occurs as claimed. Applicant did not distinctively claim that partial melting took place before or during bonding. Therefore, claims 1-20 remain rejected.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Len Tran whose telephone number is (571) 272-1184. The examiner can normally be reached on M-F, 8:30 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Len Tran
Examiner
Art Unit 1725

LT
March 12, 2004

Kiley Stoner AU 1725
Kiley Stoner 3/30/04